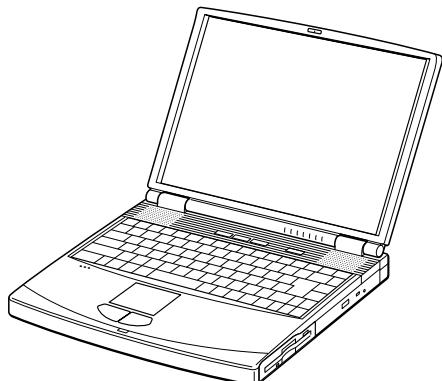


PCG-FX290/FX290K

SERVICE MANUAL

*US Model
Canadian Model*



Illust : PCG-FX290K

i™
S400

v
a
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o

NOTEBOOK COMPUTER

SONY®

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Caution Markings for Lithium/Ion Battery - The following or similar texts shall be provided on battery pack of equipment or in both the operating and the service instructions.

CAUTION: Danger of explosion if battery is incorrectly replaced. Replace only with the same or equivalent type recommended by the manufacturer. Discard used batteries according to the manufacturer's instructions.

CAUTION: The battery pack used in this device may present a fire or chemical burn hazard if mistreated. Do not disassemble, heat above 100°C (212°F) or incinerate.

Dispose of used battery promptly.

Keep away from children.

CAUTION: Changing the back up battery.

- Overcharging, short circuiting, reverse charging, multilatation or incineration of the cells must be avoided to prevent one or more of the following occurrences; release of toxic materials, release of hydrogen and/or oxygen gas, rise in surface temperature.
- If a cell has leaked or vented, it should be replaced immediately while avoiding to touch it without any protection.



Service and Inspection Precautions

1. Obey precautionary markings and instructions

Labels and stamps on the cabinet, chassis, and components identify areas requiring special precautions. Be sure to observe these precautions, as well as all precautions listed in the operating manual and other associated documents.

2. Use designated parts only

The set's components possess important safety characteristics, such as noncombustibility and the ability to tolerate large voltages. Be sure that replacement parts possess the same safety characteristics as the originals. Also remember that the Δ mark, which appears in circuit diagrams and parts lists, denotes components that have particularly important safety functions; be extra sure to use only the designated components.

3. Always follow the original design when mounting parts and routing wires

The original layout includes various safety features, such as inclusion of insulating materials (tubes and tape) and the mounting of parts above the printer board. In addition, internal wiring has been routed and clamped so as to keep it away from hot or high-voltage parts. When mounting parts or routing wires, therefore, be sure to duplicate the original layout.

4. Inspect after completing service

After servicing, inspect to make sure that all screws, components, and wiring have been returned to their original condition. Also check the area around the repair location to ensure that repair work has caused no damage, and confirm safety.

5. When replacing chip components...

Never reuse components. Also remember that the negative side of tantalum capacitors is easily damaged by heat.

6. When handling flexible print boards...

- The temperature of the soldering-iron tip should be about 270C.
- Do not apply the tip more than three times to the same pattern.
- Handle patterns with care; never apply force.

Caution: Remember that hard disk drives are easily damaged by vibration. Always handle with care.

ATTENTION AU COMPOSANT AYANT RAPPORT À LA SÉCURITÉ!

**LES COMPOSANTS IDENTIFIÉS PAR UNE MARQUE Δ SUR LES
DIAGRAMMES SCHÉMATIQUES ET LA LISTE DES PIÈCES SONT
CRITIQUES POUR LA SÉCURITÉ DE FONCTIONNEMENT. NE
REEMPLACER CES COMPOSANTS QUE PAR DES PIÈCES SONY
DONT LES NUMÉROS SONT DONNÉS DANS CE MANUEL OU
DANS LES SUPPÉMENTS PUBLIÉS PAR SONY.**

TABLE OF CONTENTS

| <u>Section</u> | <u>Title</u> | <u>Page</u> |
|----------------|--------------|-------------|
|----------------|--------------|-------------|

CHAPTER 1. REMOVAL

| | |
|--|-----------|
| 1-1. Flowchart | 1-1 |
| 1-2. Main Electrical Parts Location Diagram | 1-1 |
| 1-3. Removal | 1-2 |
| 1. Hinge Cover | 1-2 |
| 2. Keyboard Unit, Palm Rest Assy, Hood Keyboard Assy, Touch Pad, CNX-125 Board, Palm Rest Plate, Bracket Pad | 1-2 |
| 3. Display Assy, Combination Drive (CD-RW/DVD-ROM) | 1-3 |
| 4. HDD Assy, DC Fan | 1-3 |
| 5. Latch Detector, PWS-13 Board | 1-4 |
| 6. PC Card Connector, Modem card, MBX-49 Board, Lithium Battery, I/O Bracket | 1-4 |
| 7. Speaker Unit, SWX-73 Board | 1-5 |
| 8. SO-DIMM | 1-5 |
| 9. Modem Card | 1-6 |
| 10. LCD Section – Made by SA – | 1-7 |
| 1. Bezel Housing Assy, LCD Unit | 1-7 |
| 2. Inverter Assy, LCD Harness, FPC, Display Housing Assy | 1-8 |
| 1-4. Replacing the CPU | 1-9 |
| 1. Removing the CPU | 1-9 |
| 2. Installing the CPU | 1-9 |
| 1-5. DIP Switch Setting of the MBX-49 Board | 1-10 |
| | (to 1-10) |

| | |
|--|----------|
| CHAPTER 2. SELF DIAGNOSTICS | 2-1 |
| | (to 2-1) |

| | |
|---------------------------------------|----------|
| CHAPTER 3. BLOCK DIAGRAM | 3-1 |
| | (to 3-2) |

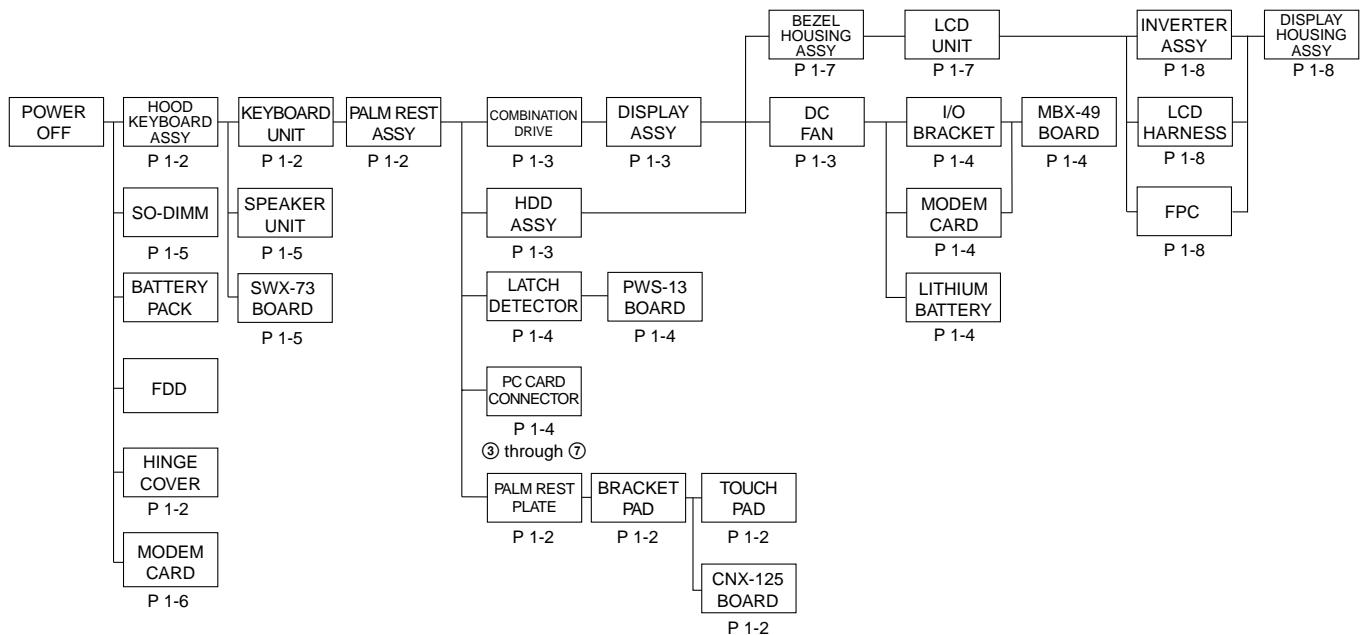
| | |
|---|----------|
| CHAPTER 4. FRAME HARNESS DIAGRAM | 4-1 |
| | (to 4-2) |

| | |
|---|----------|
| CHAPTER 5. EXPLODED VIEWS AND PARTS LIST | 5-1 |
| 5-1. Main Section | 5-2 |
| 5-2. LCD Section – Made by SA – | 5-5 |
| | (to 5-6) |

- Abbreviations
UC : US model / Canadian model

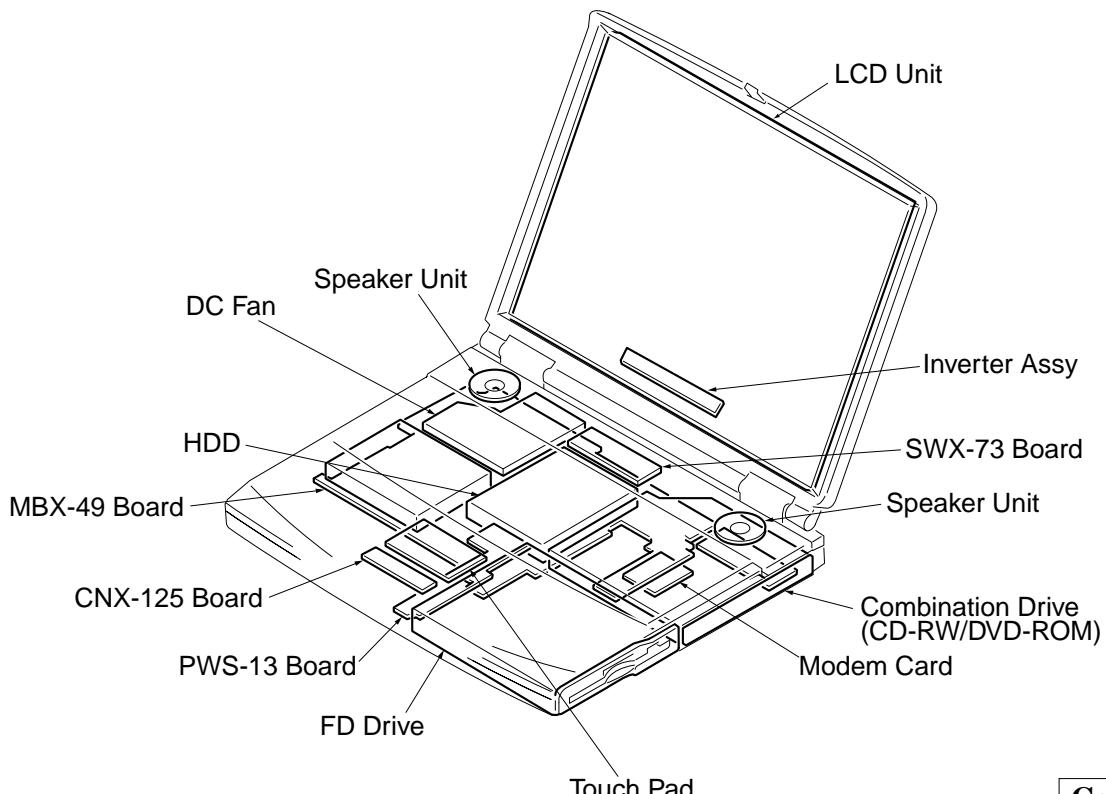
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1-1. Flowchart



- P XX means pages that appears in this manual.
- Remember that hard disk drives are easily damaged by vibration. Always handle with care.

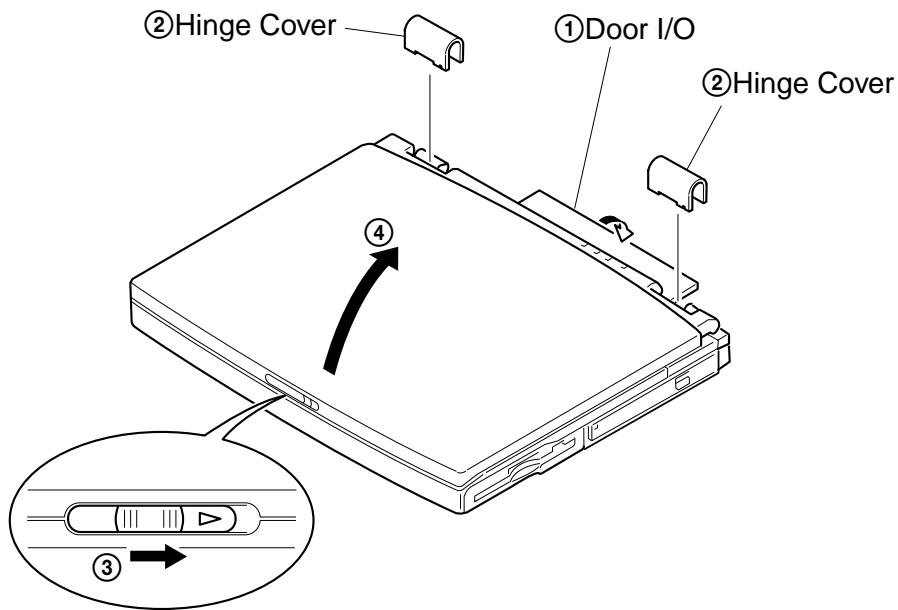
1-2. Main Electrical Parts Location Diagram



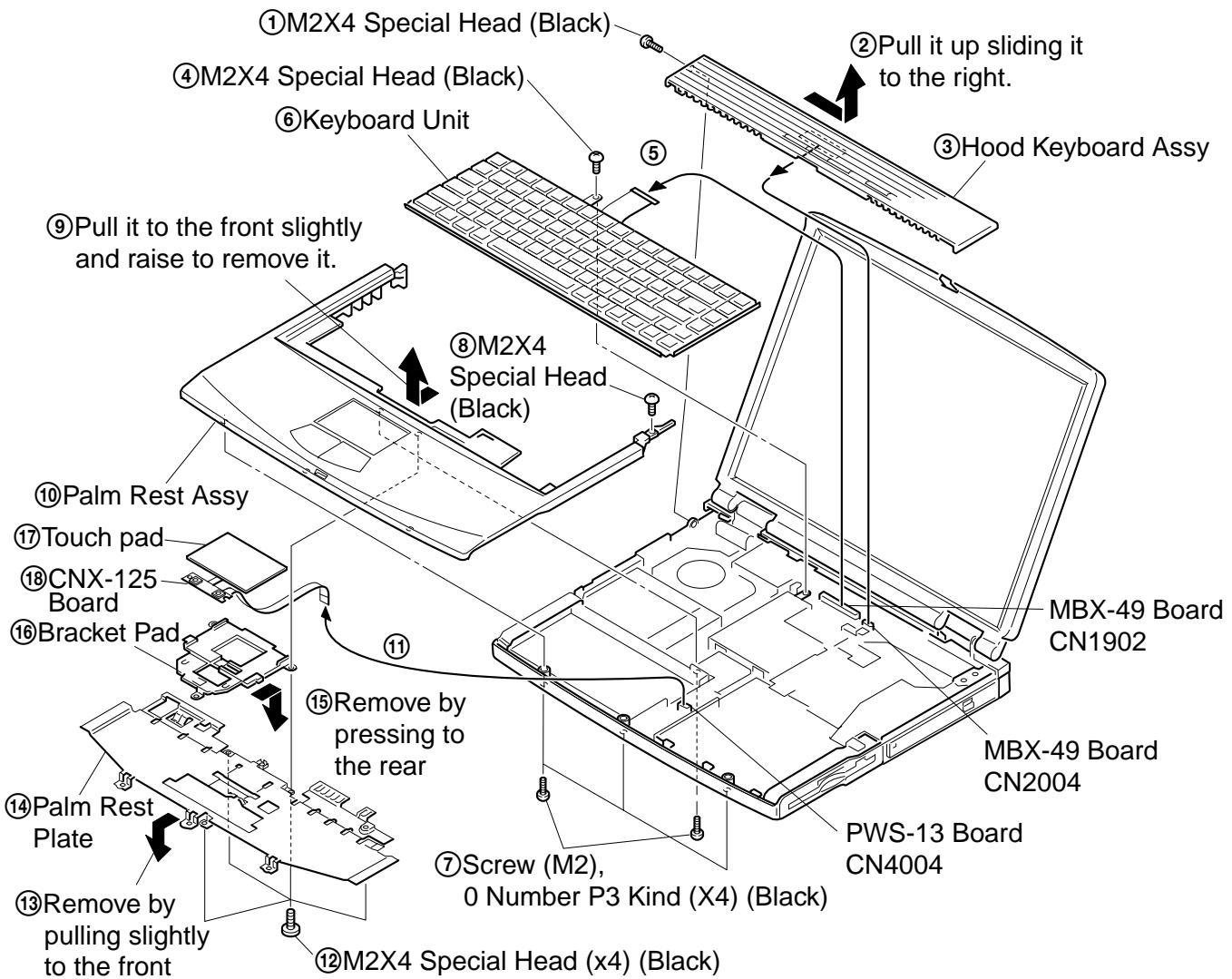
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1-3. Removal

1. Hinge Cover

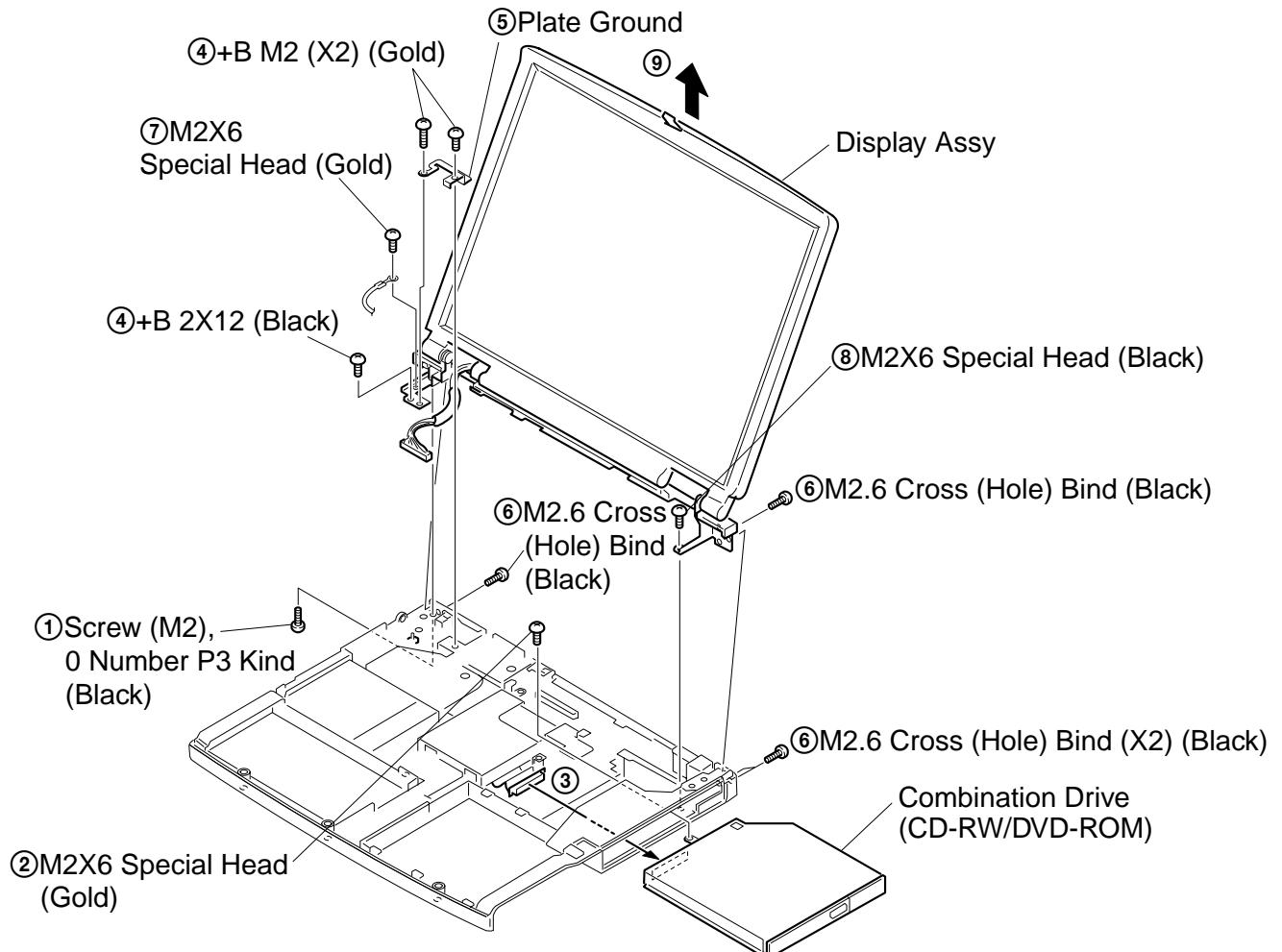


2. Keyboard Unit, Palm Rest Assy, Hood Keyboard Assy, Touch Pad, CNX-125 Board, Palm Rest Plate, Bracket Pad

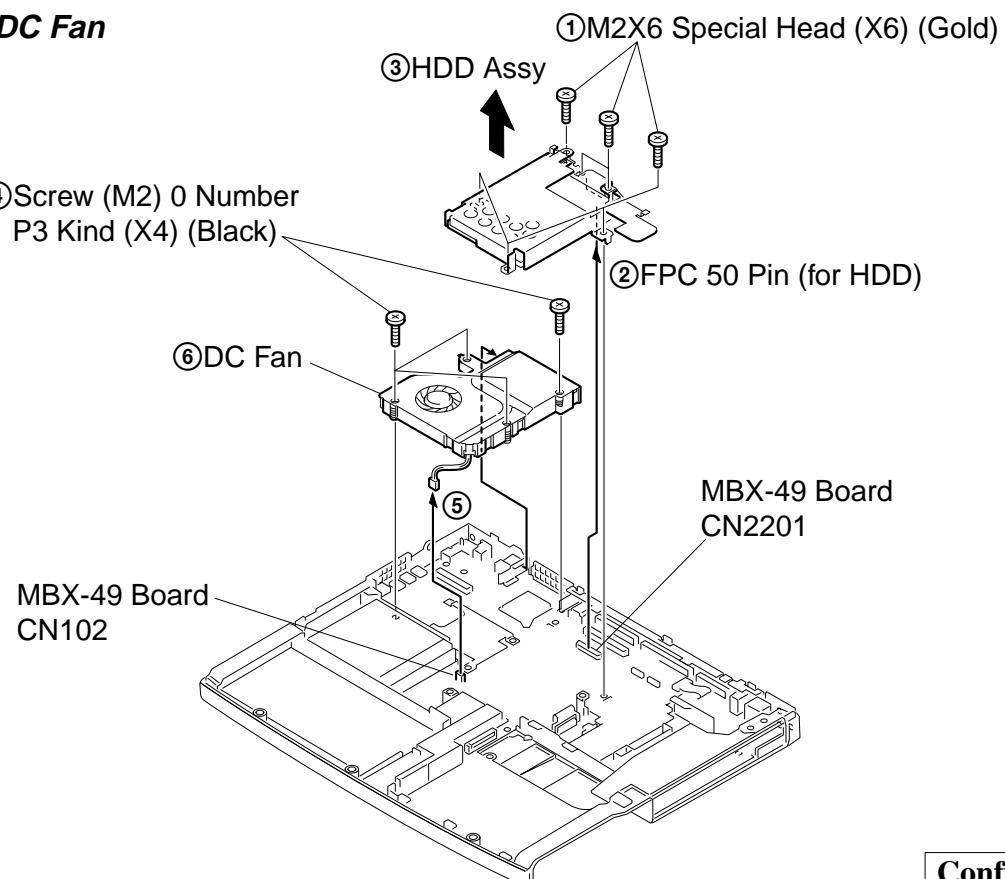


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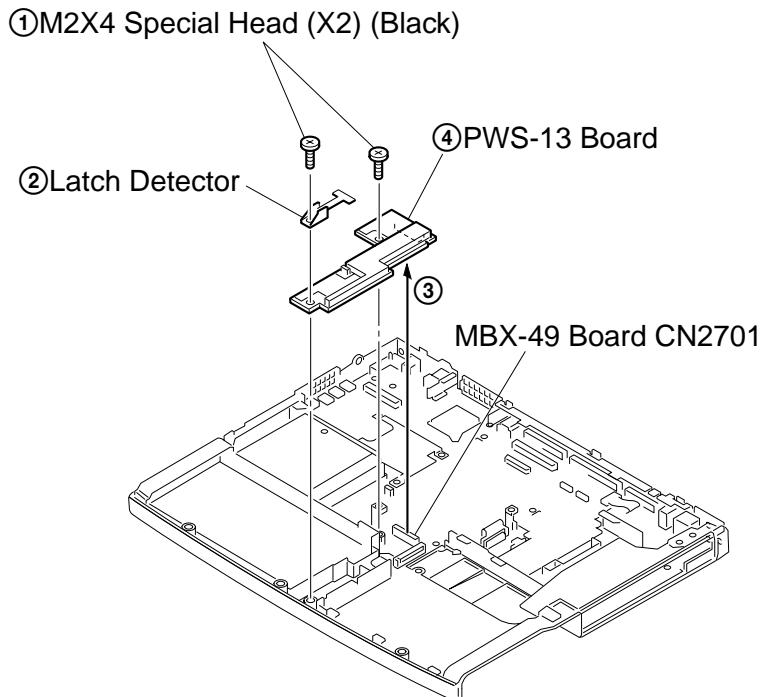
3. Display Assy, Combination Drive (CD-RW/DVD-ROM)



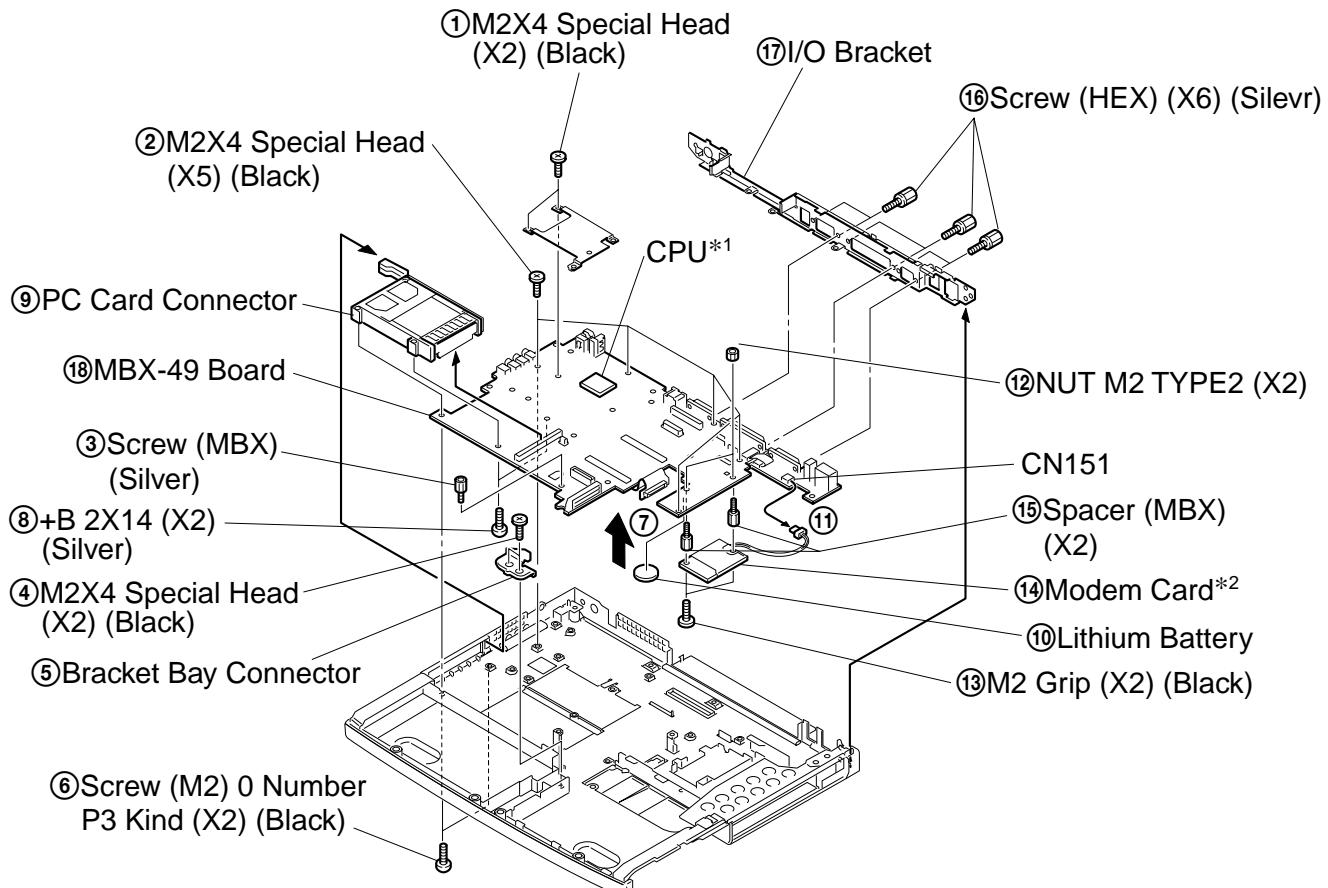
4. HDD Assy, DC Fan



5. Latch Detector, PWS-13 Board



6. PC Card Connector, Modem Card, MBX-49 Board, Lithium Battery, I/O Bracket

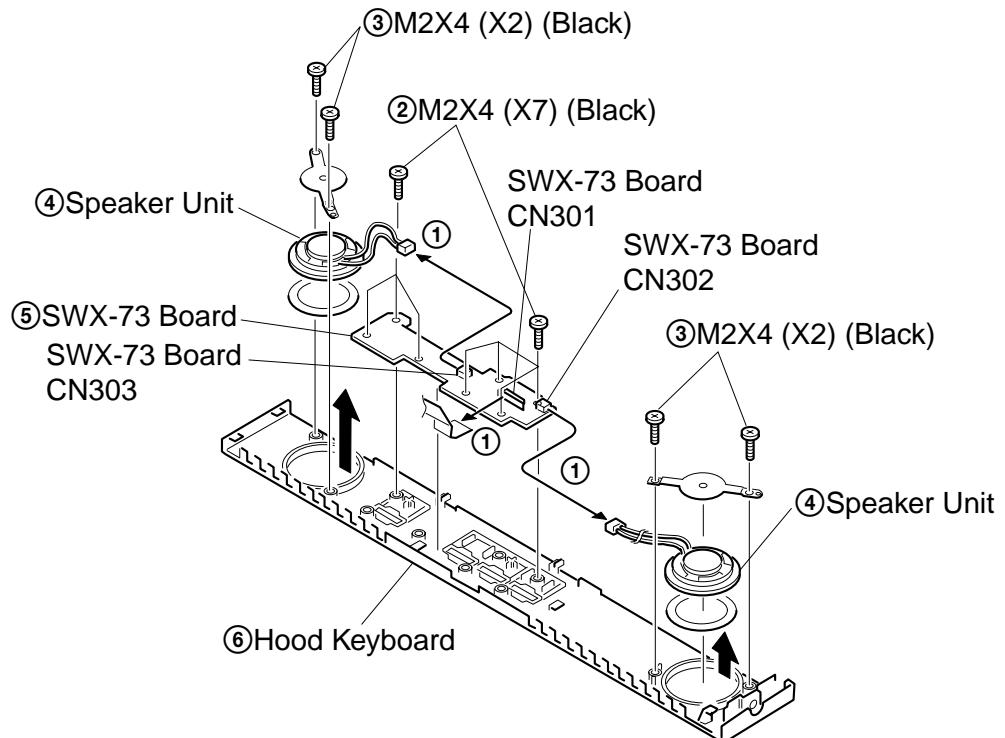


*1 When removing the CPU, refer to “ 1-4. Replacing the CPU ”.

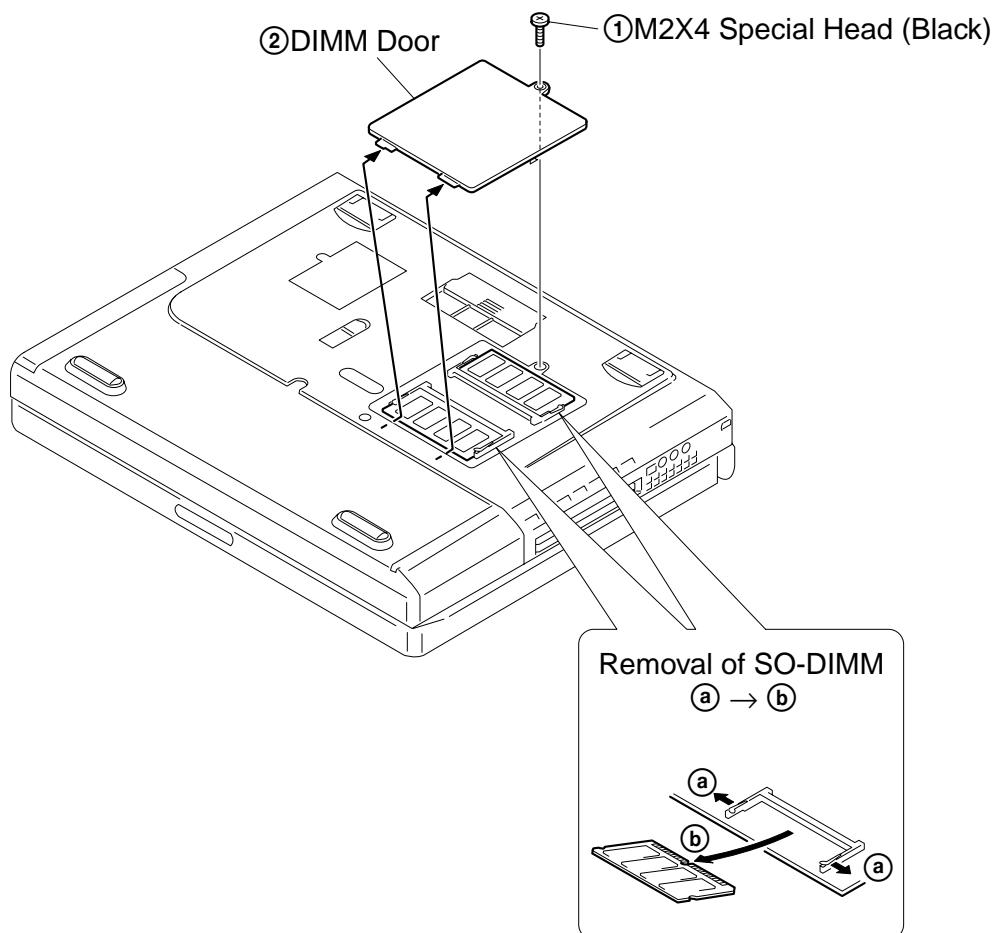
*2 Modem card can be removed from the bottom.

Refer to the subsequent paragraph “ 9. Modem card ” for more details.

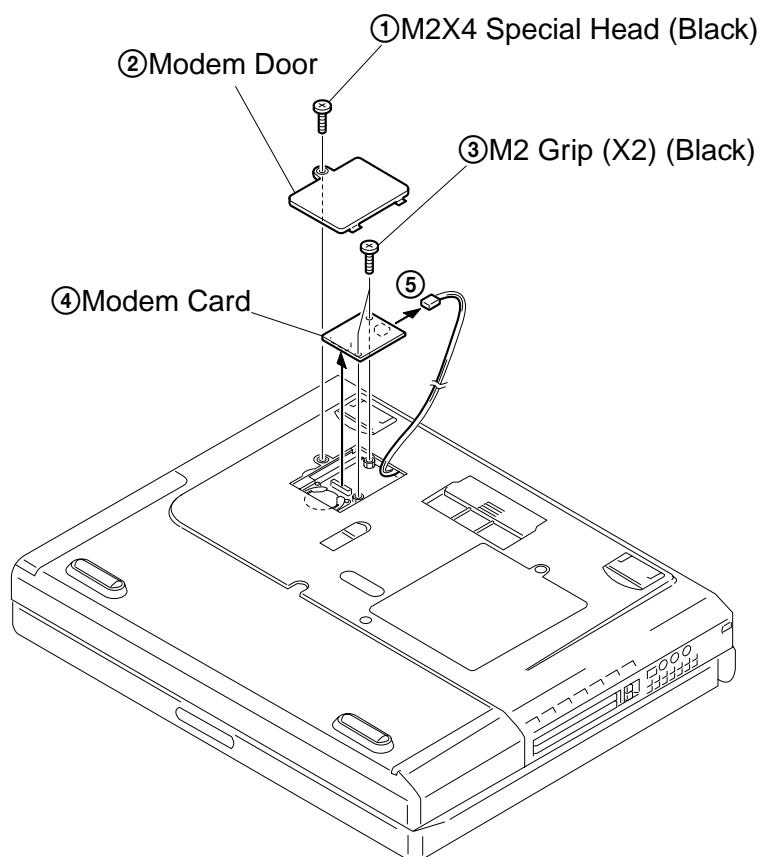
7. Speaker Unit, SWX-73 Board



8. SO-DIMM



9. Modem Card

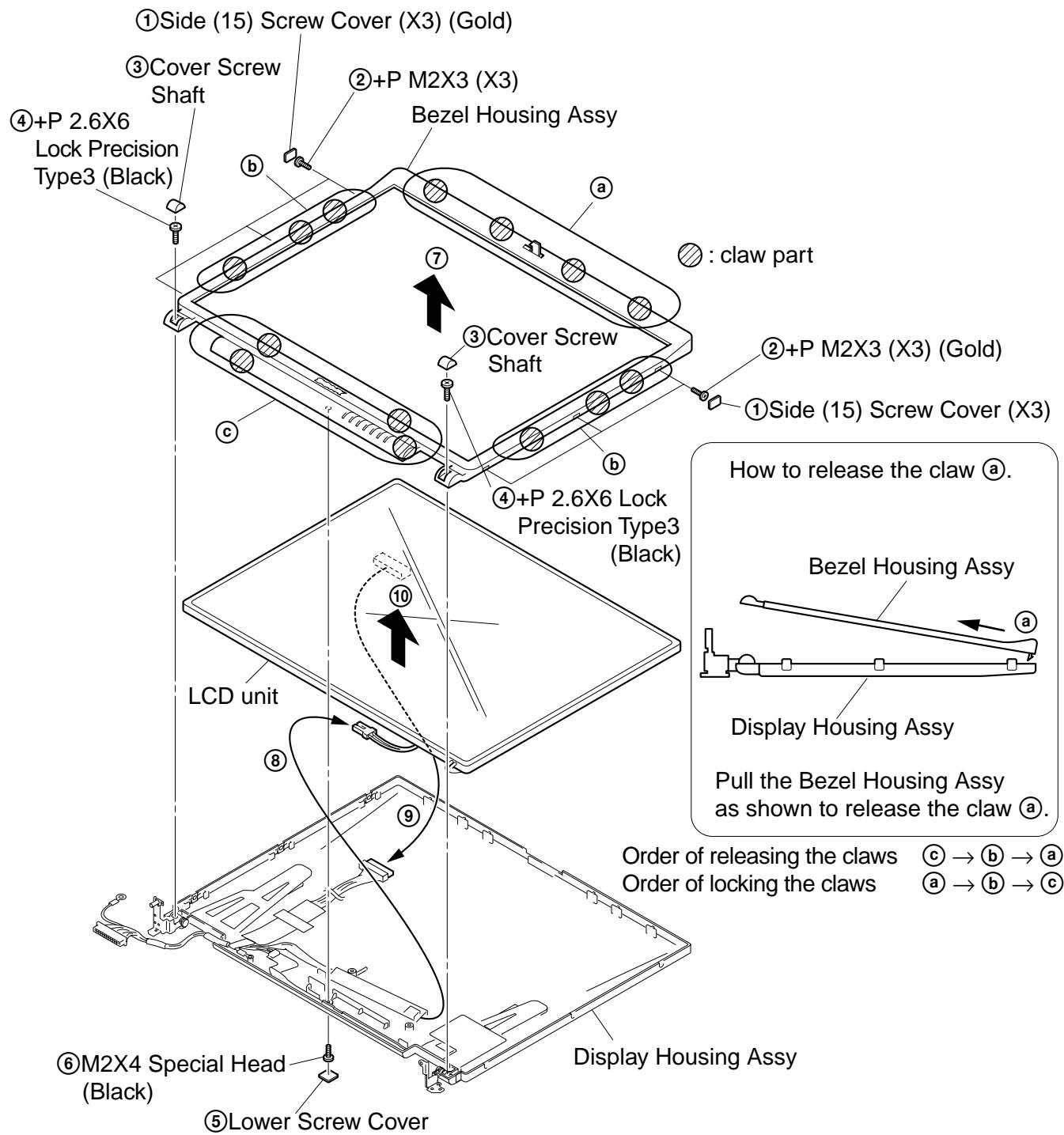


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PCG-FX290/FX290K (UC)

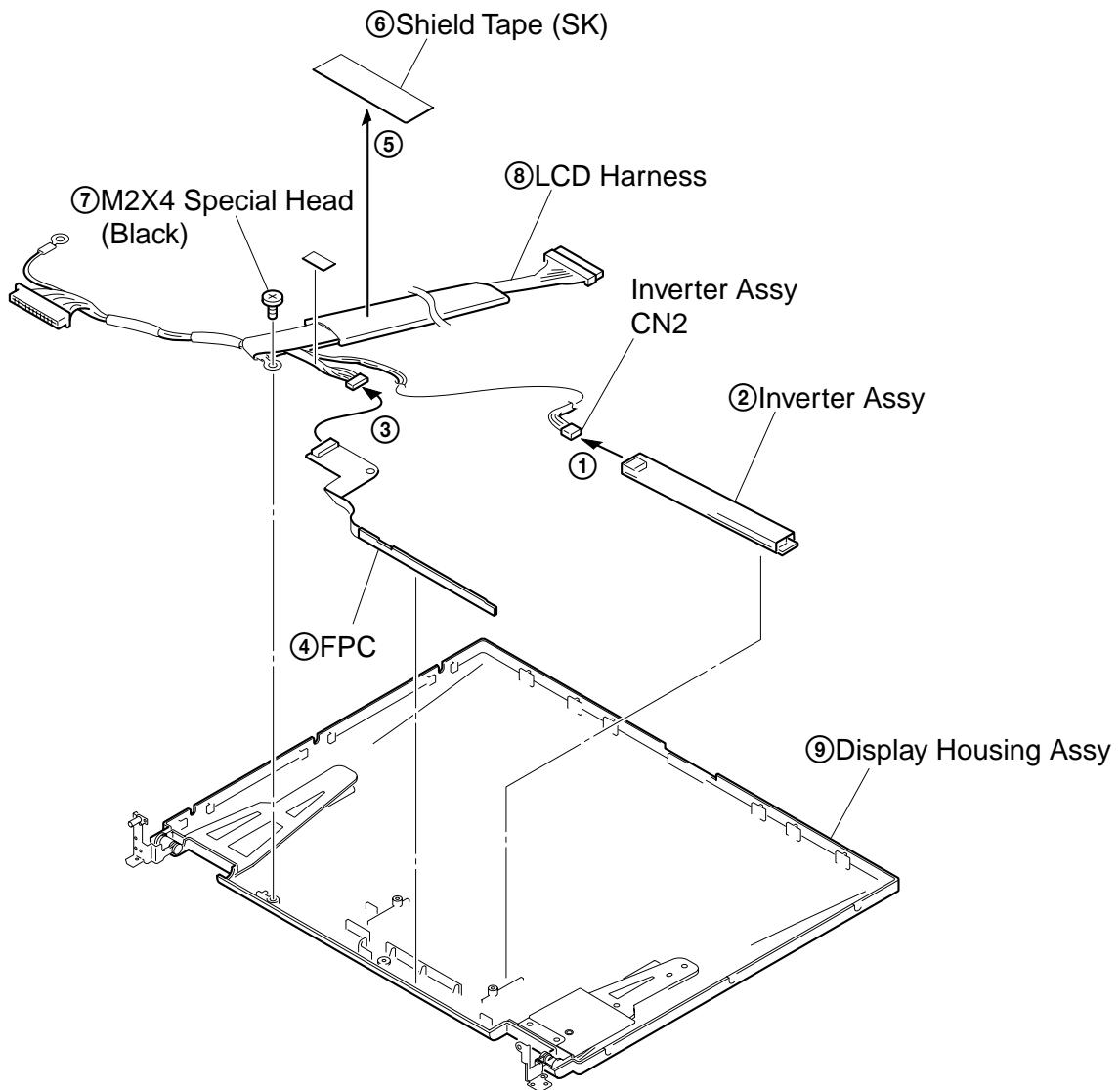
10. LCD Section – Made by SA –

1. Bezel Housing Assy, LCD Unit



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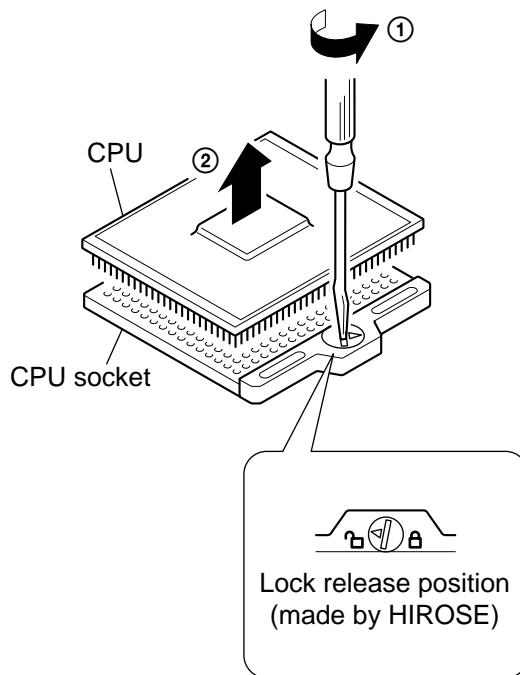
2. Inverter Assy, LCD Harness, FPC, Display Housing Assy



1-4. Replacing the CPU

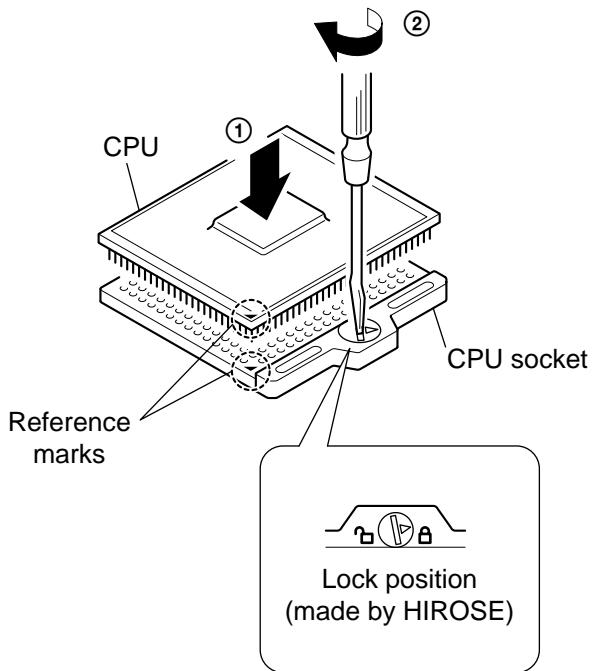
1. Removing the CPU

- ① Insert a flat-blade screwdriver into the notch as shown in the illustration and rotate it so that the protrusion comes to the lock release position.
- ② Pull the CPU gently upward to lift it out of the CPU socket.



2. Installing the CPU

- ① Align the triangle reference mark of the CPU with that of the CPU socket and insert all the pins of the CPU to the corresponding holes of the CPU socket.
- ② Insert a flat-blade screwdriver into the notch as shown in the illustration and rotate it so that the protrusion comes to the lock position.



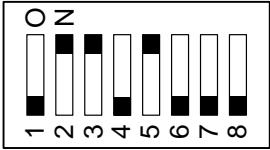
NOTE:

Rotate a flat-blade screwdriver to the lock position securely. If not, the operation of the CPU may become unstable.

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1-5. DIP Switch Setting of the MBX-49 Board

The DIP switch on the MBX-49 board (main board) is set to match with the LCD that is used in this computer.

| Part No. | DIP switch setting | | | | | | | | | | | | | | | | | | |
|--------------|---|-----|---|---|---|---|---|---|---|---|--------|---|---|---|---|---|---|---|---|
| 1-476-576-11 | <p></p> <p>The upper position where ON indication is shown is the ON position. The lower position is the OFF position.</p> <table border="1"><thead><tr><th>No.</th><th>1</th><th>2</th><th>3</th><th>4</th><th>5</th><th>6</th><th>7</th><th>8</th></tr></thead><tbody><tr><td>ON/OFF</td><td>1</td><td>0</td><td>0</td><td>1</td><td>0</td><td>1</td><td>1</td><td>1</td></tr></tbody></table> <p>0 : ON 1: OFF</p> | No. | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | ON/OFF | 1 | 0 | 0 | 1 | 0 | 1 | 1 | 1 |
| No. | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | | | | | | | | | | | |
| ON/OFF | 1 | 0 | 0 | 1 | 0 | 1 | 1 | 1 | | | | | | | | | | | |

CHAPTER 2.

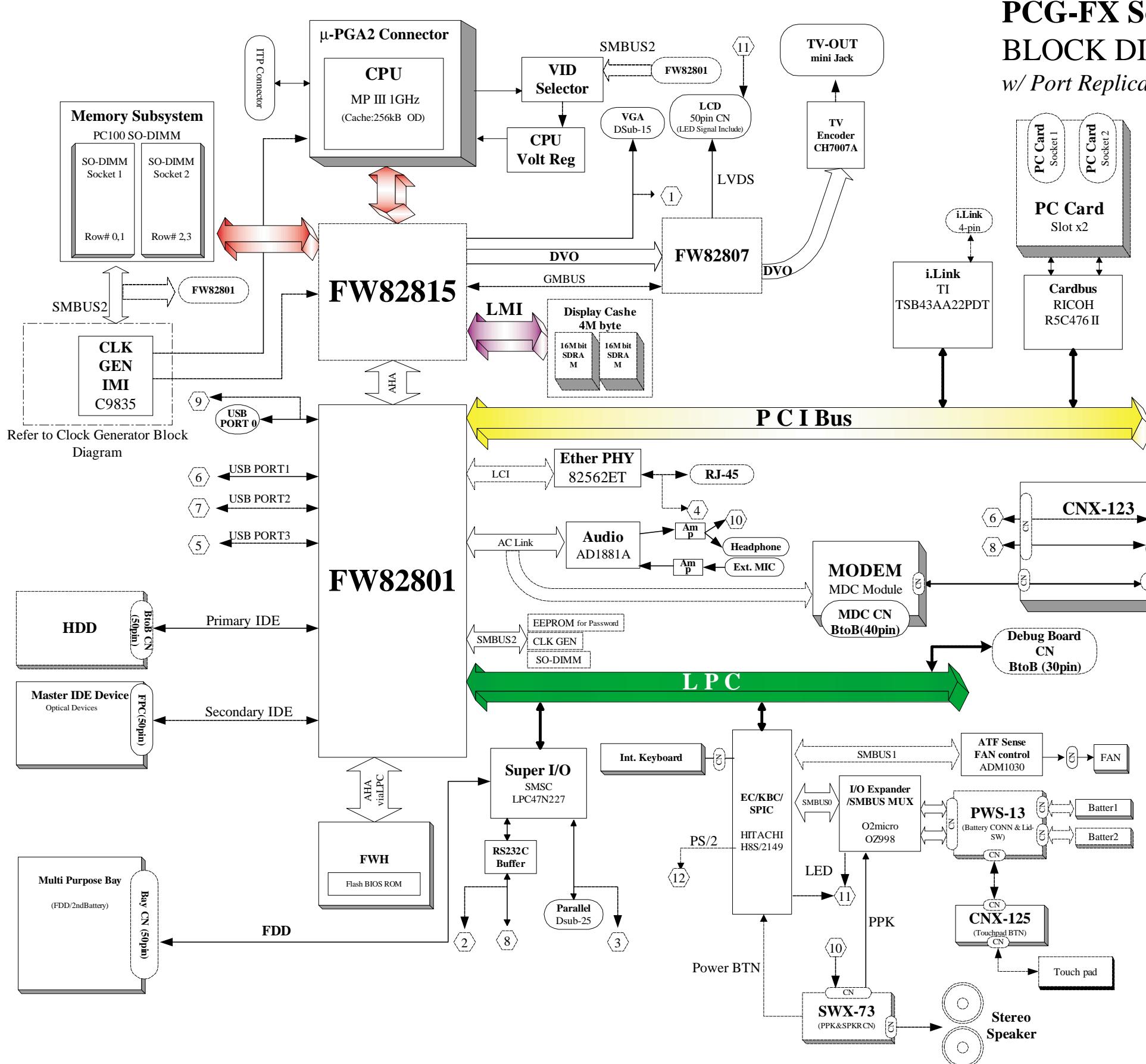
SELF DIAGNOSTICS

ATTENTION

Please confirm “Self Diagnostics” method which will be informed you with distribution of “Self Diagnostics” software.

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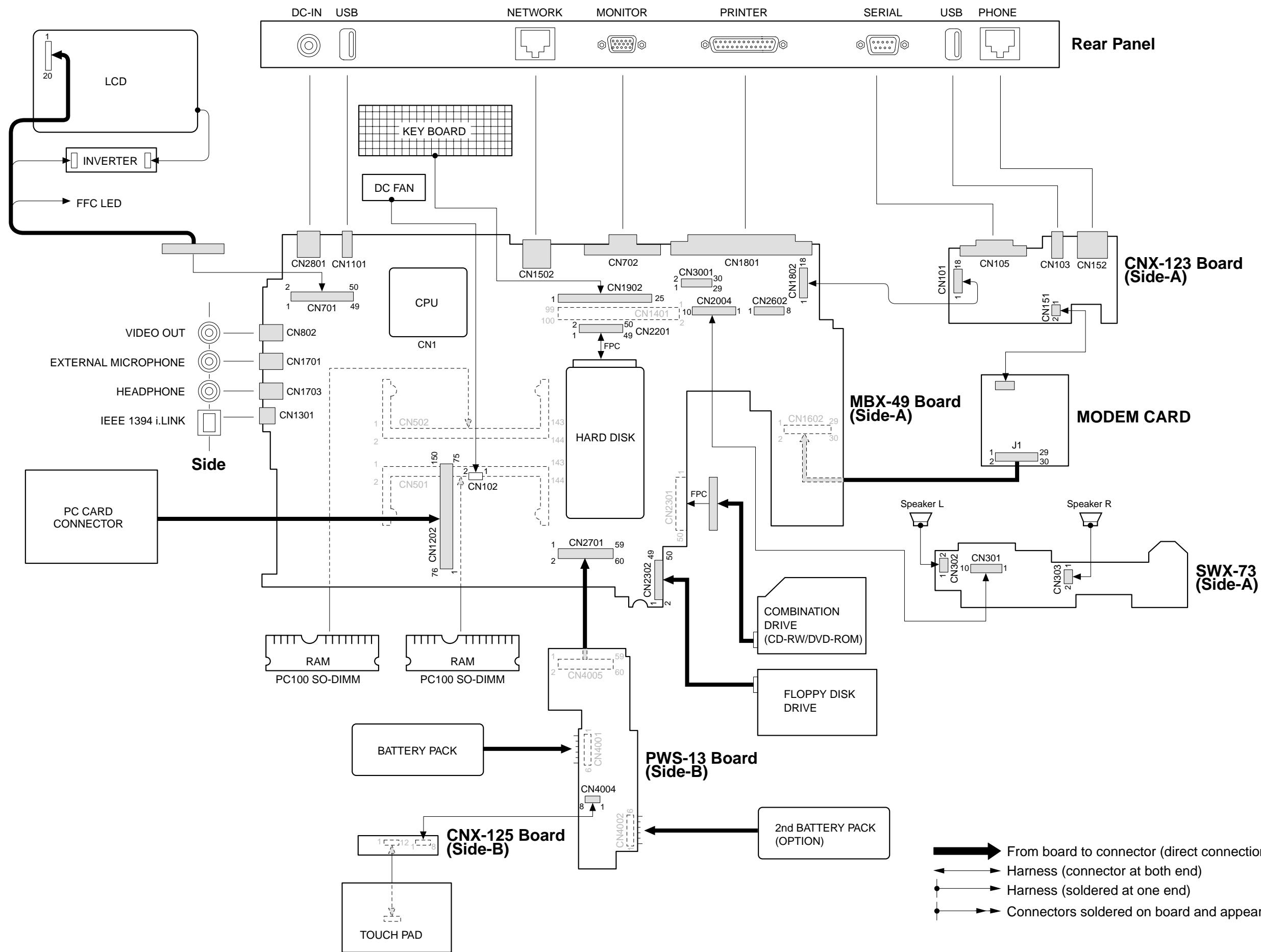
CHAPTER 3. BLOCK DIAGRAM



PCG-FX Series
BLOCK DIAGRAM Rev. 1.00
w/ Port Replicator (PCGA-PRFX1) 10/10/00

CHAPTER 4.

FRAME HARNESS DIAGRAM



CHAPTER 5.

EXPLODED VIEWS AND PARTS LIST

NOTE:

- The mechanical parts with no reference number in the exploded views are not supplied.
- Items marked “ * ” are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- When two or more parts are shown in parallel, use the part described first as the main part.

The components identified by mark  or dotted line with mark  are critical for safety.
Replace only with part number specified.

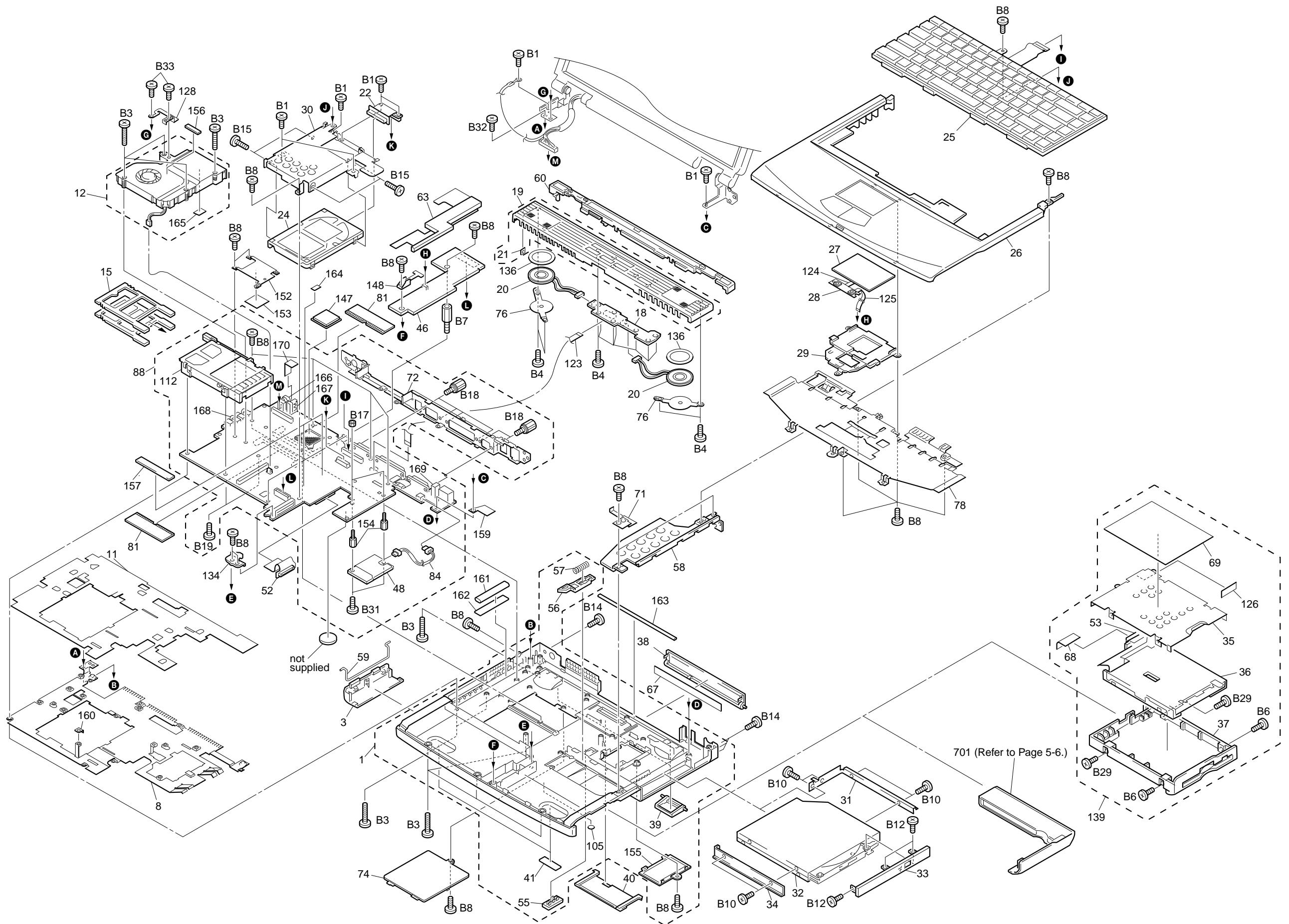
Les composants identifiés par une marque  sont critiques pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifié.

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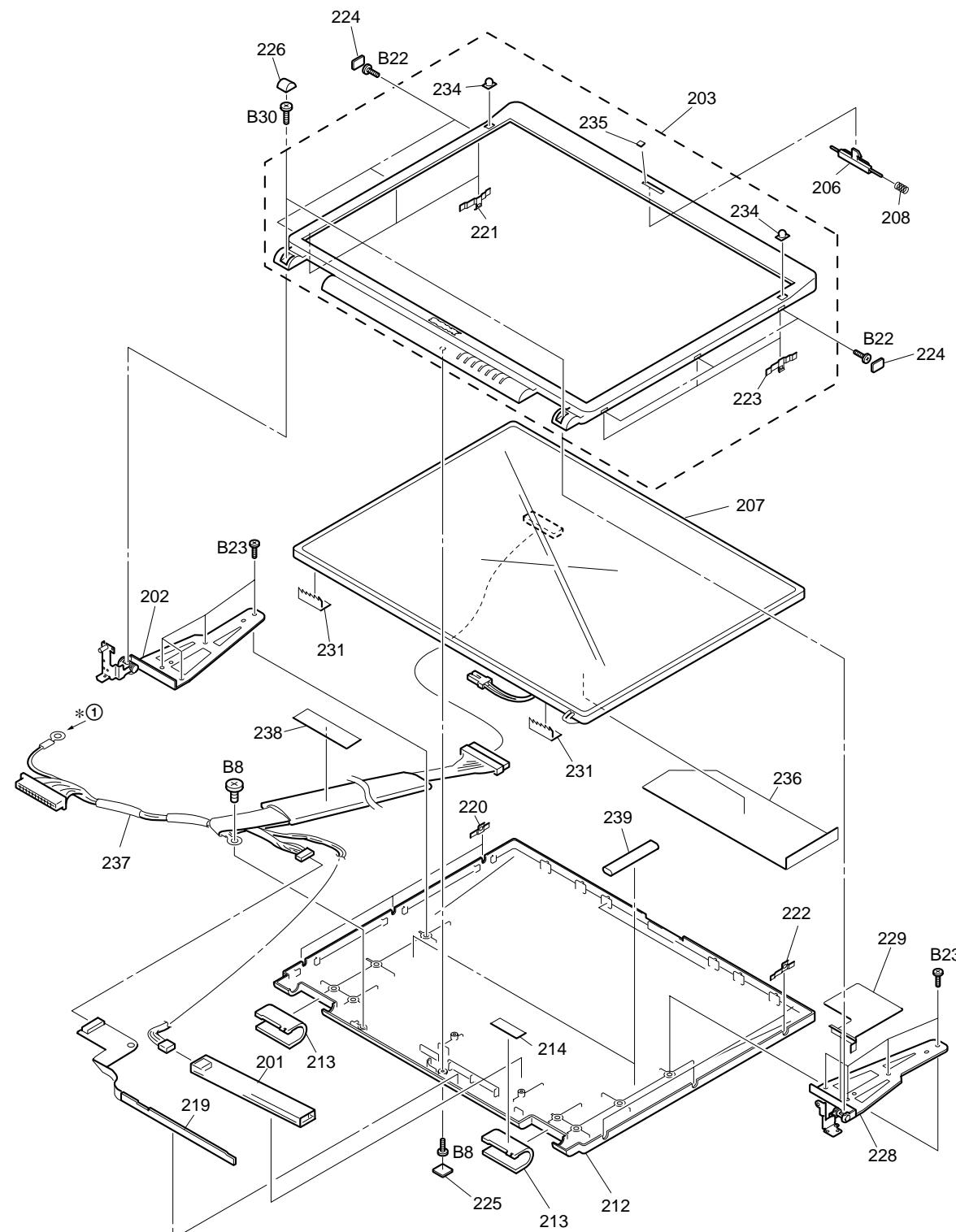
5-1. Main Section

| Ref.No. | Part No. | Description | Ref.No. | Part No. | Description |
|---------|--------------|--|---------|--------------|---------------------------------|
| 1 | X-4623-411-1 | ASSY BOTTOM (AM) | 139 | A-8048-964-A | ASSY BAY FD (CZ) |
| 3 | 4-640-837-22 | DOOR BATTERY | 147 | 8-759-835-93 | IC KP80526GY001256 (PIII 1GHz) |
| * 8 | 4-651-706-01 | HEATSINK BOTTOM | 148 | X-4623-561-2 | ASSY LATCH DETECTOR |
| * 11 | 4-651-707-21 | INSULATOR HEATSINK BOTTOM | * 152 | 4-651-871-01 | HEAT SINK |
| 12 | 1-763-658-11 | FAN, DC (WITH HEAT SINK) | 153 | 4-652-012-01 | SHEET, ELECTRIC HEAT |
| 15 | 4-643-832-21 | DUMMY CARD | 154 | 4-651-989-01 | SPACER (MBX) |
| 18 | A-8066-543-A | COMPLETE PWB SWX-73 (PPK) | 155 | 4-651-701-01 | DOOR MODEM |
| 19 | X-4623-388-2 | ASSY HOOD KEYBOARD Z | 156 | 4-653-151-01 | SPACER (KSF) |
| 20 | 1-529-287-11 | SPEAKER UNIT | 157 | 4-653-466-01 | CUSHION (HD-M) |
| 21 | 3-718-233-01 | NUT, PLATE | 159 | 4-653-963-01 | SHIELD (CNX) |
| 22 | 1-790-639-22 | FPC 50PIN (FOR HDD) | 160 | 4-653-964-01 | SPACER (B/P) |
| 24 | 1-772-936-11 | HDD (30.0GB)-DJS230 | 161 | 4-654-019-01 | GASKET (AV) |
| 25 | 1-476-647-11 | KEY BOARD UNIT (US) | 162 | 4-654-047-01 | SHIELD (AV) |
| 26 | X-4623-390-1 | ASSY PALMREST | 163 | 4-653-936-01 | GASKET (HB/M) |
| 27 | 1-772-529-72 | PAD, TOUCH | 164 | 4-654-320-41 | SHEET (COIL), THERMAL |
| 28 | A-8066-540-A | COMPLETE PWB CNX-125 | 165 | 4-654-350-01 | SHEET (CPU), THERMAL |
| * 29 | 4-651-699-01 | BRACKET PAD | 166 | 1-779-745-21 | JACK, DC |
| * 30 | 4-651-708-22 | BRACKET (HDD) | 167 | 1-815-422-11 | USB CONNECTOR (VERTICAL) |
| * 31 | 4-640-861-11 | BRACKET CD-ROM R | 168 | 1-695-514-21 | JACK (SMALL TYPE) 1P |
| 32 | 1-796-072-11 | COMBO DRIVE (UJDA710) | 169 | 1-815-221-21 | CONNECTOR, USB (VERTICAL) |
| 33 | X-4623-442-1 | ASSY DOOR DVD-RW PA (EXP) | 170 | 4-653-962-01 | SHIELD (USB) |
| * 34 | 4-640-860-12 | BRACKET (CD-ROM L) | B1 | 4-641-726-41 | SCREW (M2), SPECIAL HEAD |
| 35 | 4-640-828-01 | PLATE FDD | B3 | 4-644-899-01 | SCREW (M2), 0 NUMBER P3 KIND |
| 36 | 1-772-978-21 | FDD UNIT | B4 | 4-639-112-01 | SCREW M2X4 |
| 37 | X-4623-528-1 | ASSY BOTTOM FDD Z (TCY2) | B6 | 4-646-807-01 | 0 PLATE M2.5 (FDD) |
| B7 | 4-644-402-12 | SCREW (MBX) | B7 | 4-644-402-12 | SCREW (MBX) |
| 38 | 4-651-713-01 | DOOR I/O | B8 | 4-641-726-11 | SCREW (M2), SPECIAL HEAD |
| 39 | 4-651-844-01 | FOOT REAR | B10 | 4-652-498-01 | +B M2 (NOJI) |
| 40 | 4-651-714-01 | DOOR DOCKING CONNECTOR | B12 | 4-645-177-01 | SCREW (M1.7X3.5) |
| 41 | 4-640-851-11 | FOOT FRONT | B14 | 4-645-497-01 | SCREW (M2.6), CROSS (HOLE) BIND |
| 46 | A-8066-576-A | COMPLETE PWB PWS-13 (2ND) | B15 | 4-635-301-01 | SCREW M3X4 |
| 48 | 1-761-380-22 | CARD, MODEM | B17 | 7-622-205-05 | NUT M2 TYPE2 |
| 52 | 1-790-640-11 | FPC 50PIN (FOR CD-ROM) | B18 | 4-635-966-01 | SCREW (HEX) |
| 53 | 1-790-641-11 | FPC 50PIN (FOR FDD) | B19 | 7-621-772-70 | SCREW +B 2X14 |
| 55 | 4-640-845-11 | BUTTON BAY | B29 | 4-646-807-11 | 0 PLATE M2.5 (FDD) |
| 56 | 4-644-349-01 | LATCH BAY | B31 | 4-645-214-11 | GRIP, M2 |
| * 57 | 4-640-854-01 | SPRING BAY | B32 | 7-621-772-68 | SCREW +B 2X12 |
| * 58 | 4-651-850-01 | BRACKET BOTTOM | B33 | 4-642-852-21 | +B M2 |
| * 59 | 4-640-857-01 | DOOR BATTERY SPRING | | | |
| 60 | 4-651-698-01 | DISPLAY BASE | | | |
| 63 | 4-651-928-01 | COVER BATTERY CONNECTOR | | | |
| 67 | 4-652-099-02 | LABEL I/O | | | |
| 68 | 4-641-629-01 | INSULATOR FDD | | | |
| 69 | 4-641-763-21 | LABEL FD | | | |
| * 71 | 4-641-851-02 | SPRING (FDD), PLATE | | | |
| * 72 | 4-651-709-01 | BRACKET IO | | | |
| 74 | 4-651-702-01 | DOOR DIMM | | | |
| * 76 | 4-644-361-01 | BRACKET SPK | | | |
| * 78 | 4-644-362-11 | PLATE PALMREST | | | |
| 81 | 8-749-019-00 | IC HYM71V16M655AT6-P (PC-100 SO-DIMM (128MB CL2)) | | | |
| 84 | 1-960-827-21 | HARNESS (2 PIN) | | | |
| 88 | A-8066-832-A | MBX49 (1G) ASSY (S) | | | |
| 105 | 4-641-630-11 | COVER BAY HOLE | | | |
| 112 | 1-815-505-12 | CONNECTOR, 2 SLOT CARD BUS | | | |
| 123 | 1-790-711-21 | FFC (PPK) | | | |
| 124 | 1-757-767-11 | FFC (TP-CNX) | | | |
| 125 | 1-790-710-11 | FFC (SWX-PWS) | | | |
| 126 | 4-644-053-01 | SPACER FDD | | | |
| * 128 | 4-653-452-01 | PLATE, GROUND | | | |
| * 134 | 4-645-433-01 | BRACKET BAY CONNECTOR | | | |
| 136 | 4-644-357-01 | CUSHION SPK | | | |

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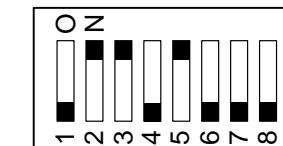
5-2. LCD Section – Made by SA –



| <u>Ref.No.</u> | <u>Part No.</u> | <u>Description</u> |
|----------------|-----------------|---------------------------------|
| 201 | 1-476-316-11 | INVERTER UNIT |
| 202 | X-4623-380-1 | HINGE LEFT 15 |
| 203 | X-4623-446-2 | ASSY HOU, BEZEL 15SA-Z (EXP) |
| 206 | 4-637-902-41 | LATCH |
| 207 | 1-476-576-11 | LCD-UNIT (15.0 TFT-SXGA+) |
| 208 | 4-637-903-01 | SPRING LATCH |
| 212 | X-4623-415-1 | ASSY HOU, DISPLAY 15SA-Z |
| 213 | 4-642-762-41 | COVER HINGE (15) |
| 214 | 4-653-704-31 | (FX290)...LABEL ID (U) |
| 214 | 4-653-704-41 | (FX290K)...LABEL ID (U) |
| 219 | 1-757-604-11 | PWB, FLEXIBLE PRINT (SINGLE) |
| 220 | 4-642-755-01 | BRACKET LCD (DL) 15 |
| 221 | 4-642-756-01 | BRACKET LCD (BL) 15 |
| 222 | 4-642-757-01 | BRACKET LCD (DR) 15 |
| 223 | 4-642-758-01 | BRACKET LCD (BR) 15 |
| 224 | 4-646-217-11 | COVER SCREW SIDE (15) |
| 225 | 4-635-277-22 | COVER SCREW LOWER |
| 226 | 4-643-549-12 | COVER SCREW SHAFT |
| 228 | X-4623-381-1 | HINGE RIGHT 15 |
| 229 | 4-643-366-11 | EDGE GUARD HINGE (15) |
| 231 | 4-643-837-01 | SHIELD (LCD) |
| 234 | 4-635-276-22 | COVER SCREW UPPER |
| 235 | 4-642-760-12 | CUSHION CENTER |
| 236 | 4-646-216-01 | SHIELD TAPE (LCD) L |
| 237 | 1-961-017-21 | HARNESS,LCD (SXGA+) |
| 238 | 4-650-831-01 | SHIELD TAPE (SK) |
| 239 | 4-653-980-01 | GASKET HINGE (15) |
| B8 | 4-641-726-11 | SCREW (M2), SPECIAL HEAD |
| B22 | 4-642-761-01 | +P M2X3 LOCK |
| B23 | 4-644-165-01 | SCREW (M2.6X4), O PLATE P1 MAIN |
| B30 | 4-643-550-01 | +P 2.6X6 LOCK PRECISION TYPE3 |

NOTE

The dip switch on the MBX-49 board (Main board) is set to match with the LCD (1-476-576-11) that is used in this computer.

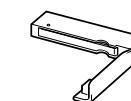


The upper position where ON indication is shown is the ON position . The lower position is the OFF position.

| <u>Ref.No.</u> | <u>Part No.</u> | <u>Description</u> |
|--|-----------------|---|
| ACCESSORIES | | |
| ***** | | |
| 701 | A-8048-965-A | ASSY WEIGHT SAVER (Z) (Refer to Page 5-4.) |
| △702 | 1-476-342-12 | ADAPTOR, AC |
| 703 | 1-528-935-13 | PACK, LITHIUM ION BATTERY |
| 704 | 1-575-875-51 | CORD, CONNECTION |
| △ | 1-757-562-21 | CORD, POWER |
| 4-654-839-11 QUICK START, FX290, FX290K | | |

701

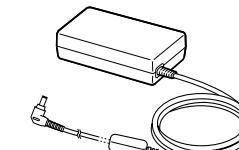
Weight saver (1)



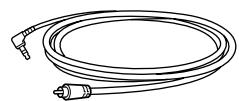
703
Battery pack (1)



702
AC adaptor (1)



704
Video cable (1)



The components identified by mark  or dotted line with mark  are critical for safety.
Replace only with part number specified.

Les composants identifiés par une marque  sont critiques pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifié.

*① For the installation position, refer to page 5-3.



PCG-FX290/FX290K (UC)

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— 32 —

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English

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